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Expert Group on Draft Principles and Recommendations for a Vital Statistics System

Note by the Secretary-General

The Secretary-General has the honour to transmit to the Statistical Commission the report of the Expert Group on Draft Principles and Recommendations for a Vital Statistics System, which is contained in the annex. The report is transmitted to the Commission in accordance with a request of the Working Group on International Statistical Programmes and Coordination at its eighteenth session (see E/CN.3/1999/20, para. 36).

The Expert Group reviewed the draft principles and recommendations for a vital statistics system (PROV/ST/ESA/STAT/SER.M/19/Rev.2), including chapter VII, which was omitted from the original draft. The Group welcomed and supported the draft document, with proposed changes in three important respects. First, it emphasized that the document should clearly spell out the need for a reliable civil registration system. Introductory material, in addition to setting out the historical context, should address the target audience of persons responsible for making decisions and planning for the development, implementation and maintenance of vital statistics systems. In this context, a section on strategic objectives was proposed.

Second, some major changes in the structure of several chapters were introduced to highlight the importance of civil registration and to clearly set out the most important issues. Chapter I, "The importance of civil registration and the vital statistics system", was redrafted to include the nature and scope of civil registration and vital statistics and their interrelationships. In addition, definitions and linkages between civil registration and vital statistics are presented, together with the uses and importance of the systems. The text of the revised chapter I is contained in appendix I to the report of the Expert Group.

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The Group proposed that chapter II, "The vital statistics system", focus on vital statistics drawn from civil registration as a preferred source. However, in recognition that data from civil registration must be supplemented by data from surveys and censuses, the Group proposed that the material on censuses and surveys be moved to chapter VII, "Other sources of data for estimation of vital statistics". Accordingly, a preliminary draft of chapter VII is shown in appendix II to the report. The Group also requested that chapter VIII, "The role of sampling in processing data on vital statistics", be incorporated in chapter II.

The Group approved chapter III, "The civil registration system as a source of vital statistics", and proposed that the material included in the draft of chapter VI, "Interrelationship between the population register and the civil registration system", be moved to this chapter so as to jointly highlight the usefulness of population registers while cautioning countries of the need to ensure long-term adequate funding for such an undertaking.

Third, a variety of important substantive issues were raised. These included incentives for registration vs. penalties (para. 32), emphasis on the role of health institutions in improving registration (para. 38), ensuring confidentiality (paras. 38 and 44), the importance of developing an ongoing evaluation programme (paras. 48–52) and the need for training and education (paras. 54 and 55). As to automation of vital statistics production and registration itself, the difficulties of developing new systems (para. 24) and the need to disseminate data even if systems are incomplete (para. 26) need to be augmented in the principles and recommendations. Several topics and their importance in public health and epidemiology were discussed, namely, fetal mortality (paras. 18–20), the relevance of legitimacy (paras. 18 and 21), maternal mortality (para. 23) and induced abortion (para. 19). In the revised principles and recommendations, the Secretariat will ensure that these points are taken into account.

The report of the Expert Group, together with a revised draft of chapter I and a preliminary draft of chapter VII, are contained in the annex. The Group recommended an outline for the final principles and recommendations as follows:

I. The importance of civil registration and the vital statistics system

II. The vital statistics system

III. The civil registration system as a source of vital statistics

IV. Evaluation of the quality and completeness of civil registration and vital statistics systems

V. Recommended strategies for improving civil registration and vital statistics systems

VI. Other sources of data for estimation of vital statistics.

Points for discussion

The Commission is requested to endorse the draft principles and recommendations for a vital statistics system, with changes as proposed in the attached report of the Expert Group.

Annex

Report of the Expert Group on the Principles and Recommendations for a Vital Statistics System

1. The Expert Group on Draft Principles and Recommendations for a Vital Statistics System met in New York from 16 to 20 November 1998. The meeting was attended by: Alejandro Giusti (Argentina), Rui Laurenti (Brazil), Alice Garner and Marianne Wiezel (Canada), Mauri Nieminen (Finland), Christophe Lefranc (France), K. E. Vaidyanathan (India), Mahmoud Sotoudeh-Zand (Iran, Islamic Republic of), Tadashi Nakada and Yoshita Aoki (Japan), Obonyo Ben Jarabi (Kenya), Robin Andrianasolo (Madagascar), Carlito Lalicon (Philippines), Judith Walton (United Kingdom of Great Britain and Northern Ireland), and Mary Anne Freedman, George A. Gay, Robert A. Israel, Joseph D. Carney and Alvin T. Onaka (United States of America). The meeting was also attended by: Odile Frank (World Health Organization (WHO)), Carlos Castillo (Pan American Health Organization), Richard Leete (United Nations Population Fund (UNFPA)), Hanya Zlotnik and Griffin Feeney (United Nations Population Division), and representatives of the United Nations Statistics Division.

2. Mr. Andrianasolo was elected Chairman, Ms. Walton was elected General Rapporteur, and Mr. Vaidyanathan, Mr. Gay, Ms. Garner and Mr. Guzman were elected as Rapporteurs for the various chapters.

3. The Expert Group was convened to review the draft principles and recommendations for a vital statistics system prepared by the Secretariat. The task of the Expert Group was to provide the Secretariat with clear guidance on required amendments to the draft to enable the preparation of a revised document.

4. In introducing the document, the Secretariat set out their rationale for its structure. The aim is to stress the importance and need for continuous and universal vital statistics of an appropriate quality and timeliness to meet national needs. To enhance international comparisons, standard concepts, definitions and classifications should be adopted. It was noted that civil registration systems are the preferred source of vital statistics, but other sources may be needed to supplement them. In the absence of a civil registration system or where it is incomplete, the use of other sources is necessary. The Group welcomed the draft and commended the Secretariat for its efforts.

5. The Secretariat indicated that the aims of the draft principles and recommendations are to define what needs to be done to produce complete, accurate and timely vital statistics and to provide guidance to countries. Details on how to implement the principles and recommendations are included in various United Nations handbooks on civil registration and vital statistics systems. Efforts have been made to take cognizance of developments in technology and communications, which have major potential impacts on civil registration systems, vital statistics systems and for data dissemination.

6. The Expert Group concurred with the UNFPA representative, who raised two important issues. First, attention should be paid to supply and demand constraints in the development and maintenance of civil registration systems. For example, on the supply side, the Government's ability to allocate resources, human and financial, to sustain systems of civil registration and vital statistics may affect their success, while on the demand side, the cost to the informant of registering an event may outweigh the perceived benefits of registration. Second, recommendations need to take cognizance of gender, age and other sensitive issues in the collection and dissemination of data. In particular, there is a need to pay more

attention to the registration of girl babies in cultures where there is differential status between the sexes.

Introductory chapter

7. The introduction sets out the historic perspective and introduces the background to the principles and recommendations. The Expert Group suggested that the introductory chapter be redrafted in the light of discussions on the substantive chapters, in particular the proposals on restructuring the document.

8. It was agreed that all redrafting should take account of the target audience for the principles and recommendations. The major users will be those responsible for making decisions to commit resources, both financial and human, to vital statistics and civil registration systems. Such persons will need access to reasoned arguments about the importance of these systems and the value of the information collected for a wide range of purposes. Other key users of the document will be those charged with the development, implementation and enhancement of vital statistics and civil registration systems. A section on strategic objectives was proposed by the Expert Group.

9. The Group expressed the view that in addition to the national responsibility, there is an international obligation to support civil registration throughout the world through technical cooperation among countries.

10. The meeting recommended that the Principles and Recommendations be written in gender-neutral language, that a glossary of terms be included and that the Secretariat incorporate the many detailed drafting changes that were noted throughout the meeting. Further, it recommended that details on implementation of the principles and recommendations be transferred to the handbooks on civil registration and vital statistics.

Chapter I. Uses of registration records and vital statistics

11. The Group recommended that chapter I be redrafted to include the nature and scope of civil registration and vital statistics and their interrelationships, specifically that the definitions and linkages between them need to be clearly stated at the beginning of the chapter. In addition, the chapter should provide arguments about the uses and importance of the systems. As endorsed by the Expert Group, the text of the chapter is contained in appendix I.

Chapter II. The vital statistics system

12. The Expert Group expressed concerns about the structure of chapter II, particularly the way in which it mixes topics relating to civil registration only, and those relating to other sources of data, such as surveys and censuses. After much discussion, it was decided to restructure chapter II to focus on system that provides continuous, timely, high-quality vital statistics. In effect, the chapter should provide guidance to gather and compile vital statistics produced from the preferred source, namely, the civil registration system. However, it should be recognized that civil registration data may be supplemented by data from surveys and censuses, and that in the absence of a civil registration system there is a need to rely on those sources.

13. The Expert Group recommended that chapter II of the principles and recommendations for a vital statistics system be restructured as follows:

(a) The definition of system and sources of data in a vital statistics system should be moved to chapter I;

(b) Chapter II should include only topics to be investigated by the civil registration method, i.e., the list contained in paragraph 91;

(c) Topics that can be collected only via surveys or other sources should be moved to chapter VII, with a cross-reference paragraph in chapter II. Thus, paragraph 92 to 102, which includes the list of topics, should be moved to chapter VII;

(d) Definitions of topics collected through civil registration should be included in chapter II, and other definitions should be transferred to chapter VII;

(e) Section F, subsection 2 describes principles of compiling vital statistics where the civil registration is lacking or deficient. This subsection should be transferred to chapter VII, with cross-references in chapter II, as necessary.

14. The Expert Group recommended that the Secretariat check both chapter II and chapter III to identify if there are any further consequential changes which need to be made.

15. To maintain consistency, the Expert Group agreed with the Secretariat that, to the extent possible, all classifications and recommendations referred to in the Principles and Recommendations should be consistent with other related United Nations recommendations.

16. To be consistent with the current status of demographic research methods, it was agreed that references to demographic methods, such as those used for indirect estimation of vital rates, should be checked and if necessary updated.

17. On the issue of how much information should be collected through civil registration for statistical purposes, the participants emphasized the need to maintain a balance between the information needs of the users and the burden imposed on the system by including many data topics. Too many topics place an undue burden on registrars and informants, which may reduce the likelihood that complete and accurate responses will be provided.

18. It was noted that the list of topics to be investigated by civil registration needs to be reordered, and additions and deletions need to be made to this list. For example, it was felt that topics relating to the derived total number of vital events, such as "total live births", "total deaths" and "total marriages", were unnecessary and should be removed. Also, "legitimacy status" of the child or of the foetus in case of foetal death should be replaced with the marital status of the mother.

19. The Expert Group recommended clarification of the distinction between the definition of foetal death for vital statistics purposes and the narrower definition used in registering a foetal death. A need was identified for data on induced abortion in the context of public health. This is not a civil registration issue.

20. The Expert Group did not agree with the statement in the report that collection of information on foetal death should have a lower priority than other vital events, live births, deaths, marriages and divorces. It was recommended that such references in chapters II and III be amended.

21. In acknowledging the remarks of the UNFPA representative on whether illegitimacy should continue to be regarded as a problem, the Expert Group recommended that a change in terminology was needed, with some explanatory text setting out diverse national practices. In some countries, the term illegitimacy has legal status, and the Secretariat was requested to ensure the inclusion of an appropriate sentence in the glossary of terms.

22. Data on the occupation of the decedent is used extensively in epidemiological and employment studies. The Group noted that it is highly desirable to obtain the main occupation of the person, rather than the most recent occupation. It was acknowledged that this may be difficult to collect and may not be consistent with recommendations for censuses.

23. There is considerable interest in maternal mortality, and there is a need to refine the questions on pregnancy to be consistent with the expanded definition of maternal mortality in the tenth revision of the WHO *International Classification of Diseases and Related Health Problems* (ICD-10).

24. The meeting recognized the need for an overview, in the document, that addresses the processes of both manual and automated/computerized civil registration systems. The fact that processes would differ depending on whether the system is manual, partly automated or fully automated was stressed. Although recognizing the advantages of developing an automated system, the Expert Group recommended that countries be advised about the difficulty and problems inherent in changing from a manual (paper-based) to a computerized system.

25. It was further recommended that this part of the recommendations should offer advice on only the various processes to be undertaken, and should refer the reader to the appropriate United Nations manuals and handbooks for details on the options on how they can be done. It was agreed that no reference should be made to specific software, because the pace of development means those mentioned may be superseded by new packages in a relatively short time period.

26. The Expert Group stressed the importance of the wide dissemination of vital statistics from civil registration. The Group requested that countries be encouraged to disseminate their data even if they are of limited quality or incomplete since for many purposes, both nationally and internationally limited information is better than nothing. In such cases, it is essential that sufficient technical information and an appropriate assessment of data quality be included to help users in the interpretation of the statistics.

27. Sections covering electronic dissemination need to appropriately reflect the range of options available, including the Internet and CD-ROM. Paragraphs which describe annual publications and monthly/quarterly bulletins should be redrafted to avoid the presumption that the output is printed, i.e. paper, reports. When releasing vital statistics, confidentiality should be ensured.

28. The Expert Group recommended that the principles and recommendations be supplemented by an annex containing outlines of essential tables.

Chapter III. The civil registration system as a source of vital statistics

29. The Secretariat explained that this chapter aims to provide guidance for the establishment and maintenance of a civil registration system in the context of being the best source of vital statistics. In particular, it stresses the need for the legal and statistical elements to be appropriately managed and coordinated to avoid duplication of effort in the preparation of legal records and the vital statistics.

30. The Expert Group recommended that a statement be included expressing the view that adequate resources must be available to appropriately establish, operate and maintain civil registration because there is no substitute for a reliable civil registration system.

31. The Expert Group agreed that the principles and recommendations should frequently stress the need for reliable civil registration systems. This point should be emphasized in the introduction to chapter III, by referencing articles in the WHO constitution that require member States to report their vital statistics.

32. It was noted that there were several references in the chapter to penalties, which are likely to have a negative impact on the registration of events. The Expert Group recommended that the principles and recommendations reduce emphasis on penalties and add information about the incentives for registration. Incentives should be expressed in terms of both those for the Registrar and those for the public as a whole, both of which are critical to developing a complete registration system.

33. The Expert Group agreed with the Secretariat that universal coverage, timeliness and accuracy of registration are crucial, and hence compulsory registration must be a requirement to report vital events that applies to the entire population.

34. The Group expressed considerable concern about the need for confidentiality of civil registration data, especially cause of death. It was recommended that discussion about the importance of cause-of-death data for public health purposes be added to the principles and recommendations. Chapter V should include mention of the need for an educational programme on the importance of these data for those certifying cause of death. Further, it should be noted that data collected solely for statistical purposes must not be used for other purposes, and should not be reflected in the certified copies of records issued to individuals.

35. There was much discussion of principles which aim to facilitate comprehensive registration, and the Expert Group made numerous recommendations to strengthen such references in the sections covering the designation of responsibilities, and integration and coordination in the civil registration system. In discussions about the involvement of other agencies, the Expert Group agreed that there should be a reference to the handbook that covers the different organization structures. Also, the role and involvement of the Health Department in assisting in the registration process should be stressed.

36. Coordination within the registration system is essential, and mention should be made about the use of electronic media for registering an event, for storage, for retrieval, for dissemination and for the transfer of information and advice.

37. It was recommended that the principles and recommendations emphasize the importance of the local registrars who are the cornerstones of the registration system. A professional association of civil registrars was identified as extremely important to appropriately reflect their role and status, along with career development opportunities and permanency.

38. The Expert Group recommended that such institutions as hospitals, health clinics and funeral directors be encouraged to play an active role in the civil registration process.

39. It was agreed that the civil registration process should encourage the timely registration of events. The principles and recommendations should state the need for time limits for each event, but without being specific because of differences in national needs. The need for a grace period for reporting events after the time specified in the law to allow for extenuating circumstances should be emphasized. A period of up to one year was proposed.

40. The section on late registration should be renamed delayed registration, to address those events registered after the grace period. The Expert Group felt that it was important for the principles and recommendations to set out guidance on the documentary proof that will be required to place delayed registrations on the file. It should be noted that a fee may be appropriate for the filing of delayed registrations.

41. The Expert Group felt that the sections covering ways of preparing records and storing and preserving records were too detailed, and should be rewritten with a reference to the handbook which already contains advice about the various methods. The revised draft should emphasize that whatever system a country adopts must make appropriate provision for long-term storage, preservation and retrieval, back-up and security.

42. There was considerable discussion about the information that should be obtained about the father on a live birth record. It was recommended that a statement be added indicating that the characteristics of the father to be included will depend on the practices within each country.

43. The Group agreed that the principles and recommendations should cover the sharing of information about vital events with other agencies for administrative purposes to clear files, such as voter registration and drivers' licenses, to remove persons who have died.

44. The Expert Group recommended that adequate protection to ensure confidentiality should be provided where personal identification numbers are used. Although safeguards are needed, such a numbering system has numerous advantages, as outlined in the handbook on confidentiality.

45. The Expert Group noted that the linkage of vital records, for example birth and death records, is important for statistical analysis, epidemiological studies and as a means of fraud prevention. To ensure confidentiality when linking records, data collected for statistical purposes should not be disseminated in a way that identifies an individual. Linking vital records with census records can only be accomplished by census staff.

46. Following discussions on the computerization of civil registration records, it was agreed that there should not be an implication that centralized processing is to be preferred. The system adopted should reflect the needs and structure of the individual country, but specific registration and processing guidelines should be provided for the country as a whole to ensure consistency.

47. When processing registration data, it is imperative that there be no imputation of data collected for legal purposes. Items collected solely for statistical use may be imputed in the absence of a response, provided the proportion of missing values is relatively low.

Chapter IV. Evaluation of the quality and completeness of civil registration and vital statistics systems

48. The Expert Group expressed the opinion that this chapter should place more emphasis on indirect methods for evaluating quality and completeness, with direct methods as an adjunct. The chapter should lay out the principles to be used, with a reference to the appropriate United Nations handbook for information about the specifics.

49. The Expert Group recommended the addition of a principle stating that every country should have an ongoing quality control programme for both civil registration and vital statistics systems, with adequate resources.

50. The Expert Group requested that some of the methods described, such as comparisons of sex ratios and comparisons of rates with other populations, be regarded as giving only rough indication of possible quality problems. Thus, they should be used only as indicators of the need for further examination or evaluation.

51. It was agreed that the principles and recommendations should emphasize that there are a variety of techniques that can be used to assess the quality of registration data. An

explanation of quantitative and qualitative issues used in assessing the completeness of civil registration is needed.

52. The Expert Group supported the view of the Secretariat that the cost of direct evaluation could be high. Nevertheless, it is worth the cost.

Chapter V. Recommended strategies for improving civil registration and vital statistics systems

53. The Expert Group supported the inclusion of an explanation of the use of training and public education for the improvement of civil registration and vital statistics systems. In addition, the principle that training is an ongoing process and not an ad hoc activity needs emphasis.

54. The Expert Group strongly endorsed the use of international workshops to promote improvements in civil registration and vital statistics systems, and to exchange experiences and share best practices. It proposed that a statement be included about the need for the international community to play an active role in promoting civil registration and vital statistics programmes.

55. There should be a reference to the need to inform medical personnel of their legal responsibilities with regard to civil registration.

56. The principles and recommendations should include reference to the need to educate various audiences about civil registration and vital statistics systems. For example, efforts are necessary to inform policy makers and senior government officials of the value and importance of civil registration and vital statistics systems in order to elicit support for the systems. The public education efforts need to include directors and staff of medical and public health schools.

57. The Expert Group felt it was essential to include a cautionary note about pilot projects. When a pilot is set up there has to be an expectation that the process being tested can be expanded throughout the country, and hence there is a need to avoid overambition.

Chapter VI. Interrelationship between the population register and the civil registration system

58. The Expert Group proposed that since this chapter referred primarily to the linkages with civil registration, it be included in chapter 3 as section G. It therefore requested that section C, dealing with the linkages to a population register with other administrative systems, be deleted. In addition, it wished to ensure that the references included were current and that some of the sections would be updated by the Secretariat.

59. Although a population register is considered to be useful, countries need to be cautioned not to undertake the preparation of a population registration programme unless adequate funding is available on a long-term basis.

Chapter VII. Other sources of data for estimation of vital statistics

60. Although it was not included in the original draft, the Secretariat briefly introduced chapter VII, pointing out that this material has been included in the publication for the first

time. After a considerable discussion, the Expert Group recommended that there need to be some references to sources other than civil registration systems but that the chapter should be shortened and restructured. It should address the complementary role of other sources of data for estimating vital rates, and should acknowledge that such sources provide an interim alternative where civil registration systems are either incomplete or being developed. However, it should be emphasized that other sources are not suitable long-term alternatives to a civil registration system as a source of vital statistics.

61. It was also suggested:

(a) To shift the focus of the chapter from discussing techniques for estimating vital rates from censuses and surveys to raising the awareness of the existence of demographic techniques to fill gaps, particularly in situations where civil registration systems are not fully developed;

(b) To discuss briefly the advantages and limitations of indirect techniques in general terms and cross-reference them to relevant materials, such as the *Manual X* and other current publications;

(c) To move the topics specific to census and surveys from chapter II to this chapter.

62. The Expert Group suggested that the Secretariat revise the chapter to incorporate the points made in the discussion. The draft of chapter VII is contained in appendix II.

Chapter VIII. The role of sampling in processing data for vital statistics

63. After discussion, the meeting recommended this chapter be integrated into chapter II, section F. It was noted that it was preferable for final tabulations to cover all records rather than a sample since information technology now makes it possible to produce tables for very large data files. Sampling techniques can be used for preliminary tables or where manual coding is required for some data items.

Appendix I

Chapter I

The importance of civil registration and the vital statistics system (revised draft)

A. Definition of a vital statistics system and sources of data

1. A vital statistics system is defined as the total process of collecting information on the frequency of occurrence of specified and defined vital events as well as relevant characteristics of the events themselves and of the person or persons concerned, and of compiling, analysing, evaluating, presenting and disseminating these data in statistical form. The vital events of interest are: births, adoptions, legitimations, recognitions; deaths and foetal deaths; marriages, divorces, separations and annulments.

2. The mainstay of a vital statistics system is civil registration, which involves the continuous gathering of information on all relevant vital events occurring within the boundaries of a country. For the calculation of vital rates, civil registration data are usually complemented by census information, which also has national coverage. However, when either civil registration data do not exist or are deficient, countries have had recourse to data sources other than civil registration to estimate the necessary vital statistics. The use of complementary data sources has also been made to enrich and evaluate civil registration data or to gather information on demographic or epidemiological processes in a way that enriches the information obtained through civil registration.

3. Additional sources used to produce vital statistics include household surveys, sample registration systems and specific questions added to population censuses. Although for some countries, the uses of these sources of data together with the application of indirect techniques of demographic estimation have been fairly successful in supplying some of the statistical indicators needed for planning purposes, there are many instances in which there is no substitute for the availability of continuous information on vital events as obtained from civil registration. This volume therefore focuses mostly on the principles and recommendations related to the improvement of civil registration and the data derived from it. Allowance is made, as appropriate, for the use of other sources of complementary or alternative data. In particular, chapters II to VI deal exclusively with civil registration and chapter VII is devoted to other sources of vital statistics.

B. The importance of civil registration

4. Because civil registration is the continuous, permanent and compulsory recording of the occurrence and characteristics of vital events as provided through decree or regulation in accordance with the legal requirements of a country, it provides the ideal source to derive data for vital statistics. Civil registration has therefore a dual purpose, administrative and legal on the one hand, and statistical, demographic and epidemiological on the other. Those two purposes reinforce each other in a number of ways, but it is important to maintain their distinctiveness in discussing the uses and operation of civil registration.

5. For the individual, the civil registration records of birth provide essential legal documentation of identity and civil status, such as name, parentage, ancestry or lineage, age, sex and nationality (citizenship), on which depend a wide array of individual and family

rights and activities, including eligibility for social programmes (e.g., family allowances, tax benefits, education services, care and protection of children, rights to insurance benefits, property and inheritance rights). Death records provide legal evidence of the fact and circumstances of death and the demographic characteristics of the decedent for purposes of inheritance, insurance claims and other death benefits, for demonstrating the right of the surviving spouse to remarry and for the support of claims for other benefits which may be predicated on the death of an individual. Marriage and divorce records provide documentation for the establishment of the civil status of individuals, for such purposes as receipt of alimony allowances, claims for tax benefits, provision and allocation of housing or other benefits related to the marital status of a couple, and changing nationality on the basis of marriage. In addition, records of divorce or other dissolution of marriage are important in establishing the right of an individual to remarry and to be released from financial and other obligations incurred by the other party.

6. There are also a number of societal interests related to the use of vital records. While, in general, the concerns of society overlap the uses of vital records by individuals, they also involve broader collective concepts of human development, human rights and the protection of children, women and the family.

7. The protective value of live birth, marriage and divorce records has been officially endorsed by the United Nations in a number of actions. The Universal Declaration of Human Rights (General Assembly resolution 217 A (III)), adopted in 1948, proclaimed in article 15 that (a) everyone has the right to a nationality, and (b) no one shall be arbitrarily deprived of his nationality nor denied the right to change it. The basic right to a nationality provided by the Declaration of Human Rights, which depends on having one's birth legally recorded, was reinforced by the adoption in November 1959 of the Declaration of the Rights of the Child (General Assembly resolution 1386 (XIV)), which affirmed, in principle 3, that "The child shall be entitled from his birth to a name and a nationality". The International Covenant on Civil and Political Rights, in article 24, states that "Every child shall be registered immediately after birth and shall have a name" (General Assembly resolution 2200 A (XXI), annex). In addition to the documentation of name and nationality, the written documentation of birth date, and consequently age, provides a source for a greater degree of accuracy in a wide range of age-related data needed for administrative purposes as well as statistical and epidemiological uses derived from such sources as a census or population survey.

8. As early as 1954, the General Assembly urged the establishment of a civil or other register in which all marriages and divorces should be recorded (resolution 843 (IX)). In addition, article 3 of the Convention on Consent to Marriage, Minimum Age for Marriage and Registration of Marriage (General Assembly resolution 1763 A (XVII), annex 9, adopted and opened for signature 7 November 1962) lays down that "All marriages shall be registered in an appropriate official register by the competent authority". In 1965, the General Assembly in its resolution 2018 (XX), principle III, adopted a recommendation on the same subject. The substantive provisions of the *Principles and Recommendations* are very similar to those of the Convention, although the Convention is more specific on the machinery for the implementation in that it recommends that Member States bring the recommendation before the national authorities competent to enact legislation, at the earliest moment and no later than November 1965. Divorce registration was endorsed by the Economic and Social Council in its resolution 1068 F (XXXIX) of 16 July 1965.

9. Marriage records are used administratively as proof of the formation of a marital bond, and may be needed to initiate family-benefit programmes related to health, housing etc. They also serve to clear administrative files on programmes dependent on single marital status, alimony payments etc. Divorce records serve similar administrative purposes.

10. Death records are used to provide legal permission for burial or other disposal of deceased individuals. They can also provide information of epidemiological importance, and signal the need for preventive control measures. Death records are also necessary to clear a number of administrative files, such as disease-case registers, population registers, social security files, military service files, electoral rolls, identity files and tax registers.

11. Civil registration also has significance in other societal areas of interest, especially with regard to the establishment and maintenance of families as units of society. The registration of births, marriages and divorces, for instance, provides tangible proof of the official recognition of the family formation process, and can yield valuable insights about the evolution of that process through time.

12. Because of the increased national and international mobility of the population, vital records have taken on additional importance. For the migrant, it has become essential to have access to documents that can prove his or her civil status and nationality. To facilitate the process of identification, those documents should conform to internationally accepted standards. That is yet another reason to establish in each country a civil registration process capable of registering vital events on a current basis that includes efficient procedures for providing documentation in those cases where timely registration has not taken place.

13. Lastly, social benefits can also be accrued from the various ways in which vital records can be used for scientific inquiry. They can be the starting point for prospective and retrospective longitudinal studies, such as the follow-up of cohorts of children to determine the effects of diet, environment, socio-economic conditions or genetic makeup on growth and health status; longitudinal studies of the health status and needs of the elderly; or of follow-back of decedents to determine the relationship of exposure to environmental hazards or to unhealthy lifestyle practices on the causes of mortality.

C. The uses of vital statistics, particularly when derived from civil registration

14. Vital statistics are an essential input for the planning of human development. Knowledge of the size and characteristics of a country's population on a timely basis is a prerequisite to socio-economic planning. Because a population increases by the addition of births and decreases by the subtraction of deaths, information about the number of births and deaths occurring in a population is crucial to estimate the natural increase to which that population is subject and the annual change in population size and structure. Information of the number of births occurring over a period and classified by various characteristics of the women bearing the children concerned constitutes the basis for the analysis of the dynamics of reproduction. Information on deaths classified by various characteristics of the deceased, especially age and sex, is necessary to calculate life-tables and estimate the probability of dying at various ages. The fertility and mortality estimates thus derived are essential for a variety of purposes, including an understanding of the growth dynamics of the population concerned, an assessment of the human aspects of socio-economic development, the measurement of the risks of dying for insurance and social security purposes, and the derivation of plausible assumptions for the calculation of population projections.

15. Vital statistics derived from civil registration are the only nationally representative source of information on mortality by cause of death. Such information is invaluable for the assessment and monitoring of the health status of a population and for the planning of adequate health interventions. The timely recording of deaths by cause can provide early

insights into trends in disease prevalence, thus helping to design prevention or intervention strategies. Whereas alternative sources of information have been developed for the measurement of fertility and the analysis of its determinants, there is as yet no adequate substitute for civil registration data in relation to the direct measurement of adult mortality, the analysis of causes of death and their relationship with the characteristics of those who die.

16. It bears stressing that vital statistics as generated by civil registration are the only source providing the basis for a variety of in-depth epidemiological studies, including the estimation of risks of premature death by sex and age, the estimation of relative risks of death among different subpopulations, and the analysis of trends in the risk of dying because of particular causes.

17. Vital statistics also encompass data on the occurrence of marriages, divorces, annulments and judicial separations. Data on those topics allow the analysis of nuptiality, and in conjunction with information on fertility permit the study of family formation. Because of cultural variations in the degree to which marriage is formalized and the variation in the legally accepted modes of contracting marriage, statistics referring to this aspect of population dynamics are often not truly comparable between countries. In particular, consensual unions are rarely reflected in civil registration data. Nevertheless, the information on contracted marriages and the incidence of officially sanctioned marriage dissolution, whatever its form, as provided by civil registration, is useful in allowing an assessment of the social impact that those parts of the family formation process may have in a population.

18. Single mothers and their children constitute a particularly vulnerable group in most populations. Appropriate provision of the services which that group is likely to need requires adequate information on their number and changes of trends over time which vital statistics can provide. A related issue is an assessment of the incidence of out-of-wedlock births.

19. When civil registration data on births, deaths and marriages are adequate, they provide a wealth of information to analyse the different facets of population dynamics and their correlates. However, even when data on a particular topic are less than adequate, the regularity of demographic processes coupled with the availability of other sources of information often provides a means of adjusting or correcting for the deficiencies of the data derived from civil registration.[a] Consequently, it is not necessary to wait until a civil registration system yields perfect data. Incomplete or deficient information is usually better than no information at all.

20. Adequate civil registration data that achieve good coverage at the national level also have the potential of allowing the estimation of differentials at the regional level, thus providing invaluable information for regional planning and the appropriate allocation of resources in such areas as education, health care and social security at the appropriate administrative level. Of particular importance in this respect is the possibility of analysing separately the population dynamics of rural and urban areas or of particular regions within a country that differ markedly among themselves and whose differences need to be taken into account in the planning of a wide array of services. That possibility can only be exploited if appropriate tabulations are made of vital statistics classified by usual place of residence.

21. Civil registration data also permit the occurrence of vital events be related to a range of socio-economic characteristics of the persons experiencing such events. Those

[a] See United Nations, *Manual X: Indirect Techniques for Demographic Estimation*, Population Studies, No. 81 (United Nations publication, Sales No. 83.XIII.2).

characteristics are generally recorded as part of the registration process, and can be provided in statistical form for further research, such as the analysis of differential mortality by sex, occupation, education or ethnicity of the deceased.

22. In sum, vital statistics are a key ingredient in the proper quantification and analysis of population dynamics, and when they are derived from a civil registration system are one of the most fundamental data systems for epidemiological research. They also provide the basis for the study of the various socio-economic facets of fertility, mortality, nuptiality and the family formation process. Vital statistics are used in a wide range of disciplines (demography, geography, sociology, actuarial sciences, epidemiology, health planning, regional planning, market analysis etc.) and for a multitude of purposes, the most important of which are closely related to the planning and implementation of human development programmes and crucial social services. As a by-product of the legally required civil registration of vital events with which citizens or residents of a country must comply, vital statistics become an even more valuable tool for planning given their coverage and continuity over time. It is hoped that these *Principles and Recommendations* will contribute to improving the sources of vital statistics already in existence, and will encourage countries that have not already done so to take steps for the establishment of a data-collection system producing the best vital statistics possible on a continuous basis.

Appendix II

Chapter VII

Other sources of data for estimation of vital statistics (preliminary draft)

1. There is no substitute for a well-designed and well-maintained civil registration system as a source of data on vital events. Where civil registration is lacking, deficient or insufficiently reliable, the major sources of data used to estimate vital statistics and rates include population censuses, household surveys and sample registration systems. These sources of data are useful in providing independent estimates of vital rates, which can be used for evaluating the vital statistics coverage available from a reliable and well maintained civil registration system or as complementary sources of information.

2. It must be stressed that even though these sources provide estimates of the current levels of fertility, mortality, foetal mortality, marriage and divorce, they are not a substitute for vital registration since they cannot provide such details as estimates of mortality by cause of death, other epidemiological information or annual vital statistics. In other words, a universal and well-maintained vital registration system remains the single best source of information on vital events for administrative, demographic and epidemiological purposes.

3. This chapter is divided into two sections. In section A the various sources of demographic data are discussed. This is followed in section B by descriptions of demographic parameters that can be estimated using specific topics from these sources, together with various direct and indirect demographic techniques.

A. Sources of vital statistics and rates

4. Each of the three sources of estimates of vital events has its own advantages and limitations, and users should keep them in mind when using these data to estimate vital rates. It should be recognized that the methods used to estimate vital rates from these sources are based on assumptions and approximations of the demographic relationships between various characteristics of the population, and as such caution needs to be exercised in their use, particularly when analysing time trends and precise levels.

1. Population censuses

5. A population census is the total process of collecting, compiling, evaluating, analysing and publishing or otherwise disseminating demographic, economic and social data pertaining, at a specified time, to all persons in a country or in a well-delimited part of a country. The essential features of population censuses are individual enumeration, universality within a defined territory, simultaneity and defined periodicity. Individual enumeration does not preclude the use of sampling techniques for obtaining data on specified characteristics, provided that the sample design is consistent with the size of the areas for which the data are to be tabulated and the degree of detail in the cross-tabulations to be made. Nearly all the countries of the world are conducting a population census regularly.

6. Censuses are prone to non-sampling errors, and they are poor mechanisms for gathering data in complex fields requiring extensive interviewing, such as health, nutrition and income. However, censuses do provide a useful basis for estimating vital rates at all

geographic levels, which are not possible from household surveys. Besides providing the stock of the size of population, censuses also provide the frame for sample surveys.

2. Sample surveys

7. Household surveys are among the most flexible of all data-gathering mechanisms. In principle, almost any subject can be explored, and the concept and level of detail can be adapted to the requirements of the investigation. Population sample surveys provide a basis for updating census information, at least for the nation as a whole or for broad geographical areas. The relationship between a population census and household survey is essentially complementary. A census is infrequent but geographically detailed, while household surveys are conducted more frequently and provide detailed information on intercensal change in demographic parameters. However, household surveys are relatively costly and the information is subject to many kinds of non-sampling errors arising from the interviewing process. Survey information is also subject to sampling error.

8. In recent years, there has been a proliferation of specialized surveys concerned with very specific issues, such as fertility, infant and child mortality, reproductive health and morbidity. The World Fertility Survey and currently the Demographic and Health Survey programmes are the two most notable of such surveys. In these surveys, a household interview is used to screen for eligible respondents. The individual respondent is then interviewed separately to obtain detailed information on fertility histories, child or infant mortality and nutrition, health behaviour and other similar topics. The individual respondent surveys have advantages over household surveys because respondents are reporting about their own experiences, and as such there is less likelihood of reporting bias. However, such surveys are extremely expensive and can only be conducted infrequently.

3. Sample registration system

9. In many countries where vital registration systems are not fully developed, countries have adopted sample registration systems to register vital events. The sample registration surveys record birth and death on a continuous basis, as in a civil registration system. If conducted properly and followed up over time, the sample registration system can develop into national civil registration. In many countries, the sample registration is complemented by a quarterly or biennial enumeration in the sample area by an independent enumerator to collect information on births and deaths. The events reported in the two systems are then matched, and the unmatched events are field-verified to ensure that the events belonged to the sample area and have occurred during the reference period. Thus, for each calendar year one has three types of events: those reported by both systems (matched events) and those missed by one but caught by the other. Such a system is also called the dual record system. In some instances, a fourth category is added to reflect the event which might have been missed by the two systems of recording.

B. Estimating vital rates

10. This section provides an overview of the information on vital events available in censuses and surveys that can be used to provide estimates of vital statistics and rates.

1. Live births

(a) Children born alive to mother (woman) during her entire lifetime

11. This topic is defined to include all children born alive to the woman concerned, up to the time of the inquiry. The number recorded should comprise all live-born children, sons and daughters, whether born of the present or of previous marriages, regardless of whether they are living or dead at the time of the inquiry and regardless of whether they are living with the mother or elsewhere. In the case of multiple births, each live-born child is counted separately.

12. In field surveys, data on live-born children should preferably be collected for each woman of childbearing age and over who is a member of the household at the time of inquiry, regardless of her marital status and regardless of where she was residing at the time of birth of her children. Special care will have to be taken to ensure inclusion of deceased children born in a place other than the place of usual residence.

13. If in a field survey, it is not feasible to obtain information for never-married women, information on total live births should at least be collected for all women 15 years of age and over who are currently married (including consensually married), widowed, separated or divorced. Whatever the group of women for whom the data have been collected, these women should be clearly described so as to avoid ambiguity in the analysis of the results, especially if, as is often the case in statistically less developed countries, the available data for estimating fertility are defective.

14. The collection of accurate data on the number of children born alive can be difficult. This is because of the omission of children who die soon after birth and poor recall of events, in particular by older women. In this case, a method developed to adjust the current age-specific fertility rates obtained from direct estimation of fertility in the last 12 months with a correction factor based on the cumulative fertility of women of known ages can be applied.[a] In many instances because of errors in the reported age of women, the cross-classification can be erroneous. Such biased distributions will cause gross errors in the estimation of fertility.[b]

(b) Date of birth of last child born alive

15. The most straightforward means to enumerate live births is to ask, in the course of a census or a survey, questions regarding the live births that occurred in a preceding period of 12 months to any woman of childbearing age in the household. Such direct retrospective questions on live births in the past 12 months are not recommended, however, because responses are subject to mistaken recall of events in the reference period, as well as other errors of recall and misunderstanding.

16. Alternatively, information on date of birth (day, month and year) of the last child born alive and on the sex of the child is used for estimating current fertility. Later, at the processing stage, "the number of children born alive in the 12 months immediately preceding the census date" can be derived as an estimate of live births in the last 12 months. For estimating current age-specific fertility rates and other fertility measures, the data provided by this approach are more accurate than information on the number of births to a woman during the 12 months immediately preceding the census.

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[a] See William Brass, *Methods for Estimating Fertility and Mortality from Limited and Defective Data* (Chapel Hill, N.C., University of North Carolina, Laboratories for Population Studies), 1975, pp. 11–17; and the methodology is elaborated in United Nations, *Manual X: Indirect Techniques for Population Estimation*, Population Studies, No. 81 (United Nations publication, Sales No. E.83.XIII.2), chap. II.

[b] See United Nations, op. cit., chap. II, pp. 28 and 29.

17. To obtain better results, it is recommended to ask directly from or for each woman of childbearing age in the household, usually women aged between 15 and 50 years, the date of birth of her most recent live-born child. It is also recommended to ask the woman two further questions — the survival status of the child at the time of the inquiry and the sex of the child — in order to improve estimation of infant mortality and of sex differentials in infant mortality.

18. The inclusion of these questions may be more suitable for use in sample surveys than in censuses insofar as they are time-consuming and complex. One option is to ask these questions of a subsample of women in a census. It is then important that the sample is selected so that all data are collected from the same women or from a subsample of those women to ensure that the data can, as appropriate, be cross-classified in tabulations and used collectively for analytical purposes. This is particularly important if it is also intended to ask questions on lifetime fertility in order to derive indirect estimates of fertility and to correct current fertility estimates.

19. National census practice lends support to the conclusion that it is prudent and cost-effective to utilize the opportunity provided to include these questions in censuses, not only where vital registration is weak but also where the costs of periodic surveys are high. Accordingly, current principles and recommendations regarding population censuses support their inclusion.

20. Finally, in the absence of any dedicated question to estimate fertility from a census, it is possible to apply methods developed to derive fertility estimates as the intrinsic vital rates of a model stable population selected to fit the age-sex distribution of an enumerated population, according to several criteria. This approach is not recommended, but may be applied in the case of past censuses in which insufficient data were collected in order to examine trends in vital statistics.

21. In conclusion, these data, classified according to age of mother or duration of conjugal life, can be utilized to derive estimates of number of live births and age-specific fertility, either by the direct method or by an indirect method. The details of the estimation procedures are given in *Manual X* and are not repeated here. However, it may be mentioned that considerable caution needs to be exercised in the utilization of these methods since the errors in the data and violation of the assumptions in the estimation procedures could result in misleading estimates. These estimates could be improved upon by utilizing additional information from the census or survey (an example is the own-children approach, wherein the live births are linked to their natural mother), and by testing the completeness of the reporting of live births.

2. Deaths

22. Information on deaths can be obtained through information gathered in censuses and surveys. Infant and child mortality can be estimated from information on deaths during the 12 months preceding the census or survey by sex and age of the mother; number of live births during the lifetime of the women (children ever born) and the number of surviving children according to age of the mother and duration of conjugal union; and date of birth of the last live birth and whether the child is surviving, and if deceased, date of death of the child. From questions on pregnancy history, information can be obtained on the survival status of each child and the age at last birthday or age at death, as appropriate.

23. Estimates of adult mortality can be derived from distribution of deaths by sex and age groups from the respective questions in the census or survey, along with the distribution of population by sex and age groups in the census or survey.

24. As in the case of fertility, considerable caution is needed in the application of these methods in situations where the data could be seriously defective or the implicit assumptions are not valid. In such cases, mortality is estimated using indirect techniques, which may require additional questions in censuses and surveys, such as orphanhood and widowhood.

3. Marriage and divorce

25. Censuses and surveys provide information on nuptiality, such as marital status distribution by sex and age groups; distribution of ever-married men and women according to duration of marriage; and information on multiple marriages (number of times married).

26. These data are used to derive estimates of mean age at marriage, proportion of population married, widowed and or divorced, mean duration of fertile union etc. They could also be utilized to derive nuptiality tables. However, they cannot be utilized for deriving marriage and divorce rates. It is necessary to exercise great caution in utilizing such data as proxy for civil registration, particularly when estimating net marriage rates and mean age at marriage. In many countries, the range of marital status categories provided in censuses and surveys do not adequately describe the prevalence of formal marriage combined with relatively stable de facto unions outside marriage.

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Statistical Commission
Thirtieth session
1–5 March 1999
Item 4 of the provisional agenda*
Demographic, social and migration statistics

Siena Group for Social Statistics

Note by the Secretary-General

The Secretary-General has the honour to transmit to the Statistical Commission the report of the Siena Group for Social Statistics (secretariat: Italy), which is contained in the annex. The report is transmitted to the Commission in accordance with a request of the Statistical Commission at its twenty-ninth session,[1] and a request of the Working Group on International Statistical Programmes and Coordination at its nineteenth session (see E/CN.3/1999/20, para. 13 (c)).

The Statistical Commission is invited to discuss whether the mandate of the group is focused and whether its objectives are clear and attainable. The Commission may also wish to comment on the proposals for future work.

Notes

[1] See *Official Records of the Economic and Social Council, 1997, Supplement No. 4* (E/1997/24), chap. I.

* E/CN.3/1999/1.

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Annex

Report by the Siena Group for Social Statistics

Purpose

To promote and coordinate international cooperation in the areas of social statistics by focusing on social indicators, social accounting, concepts and classifications, and an analysis of the linkages and frameworks for integrating social, economic and demographic data for the purposes of policy formulation and analysis.

Year organized

1993.

Participants

Australia, Canada, Finland, France, Germany, Greece, Israel, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Republic of Korea, Singapore, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, United States of America, Economic Commission for Europe, Statistical Office of the European Communities (Eurostat), United Nations Statistics Division.

Meetings and other events

Siena, 17–20 October 1993.

Stockholm, 6 and 7 June 1994.

Oslo, 8 and 9 June 1995.

Paris, 6 and 7 June 1996.

Neuchatel, Switzerland, June 1997.

Sydney, December 1998.

5–11 July 1998, First International Summer School on Social Statistics, on the theme "Inequality and equity", organized by the Training Institute for European Statisticians and the Siena Group in cooperation with the University of Siena Group and sponsored by the European Commission (Eurostat). This was the first of three courses/themes to be arranged over three consecutive years. The second theme (1999) will be: "Participation, discrimination and exclusion", approached mainly from the meso level. The third theme (2000) will be "Cohesion, integration and policy analysis", approached mainly from the macro level. The first theme may be repeated in 1999 and the second in 2000.

Topics considered

Social statistics, national accounts and economic analysis; social reporting and social accounting; monitoring social exclusion in education and labour markets; intergenerational relations and social mobility; on the way to a multicultural society; families at the end of the twentieth century; and inequality and equity.

Products

A Statistical Portrait of Youth Exclusion (1997)

Volume of proceedings after each meeting

"Monitoring multicultural societies", a Siena Group report, Jacqueline Buehlmann, Paul Roethlisberger and Beatm Schmid (Swiss Federal Statistical Office), eds., Berne, 1998.

Planned activities

The meeting scheduled for 7 to 9 December on the theme "Families at the end of the twentieth century", which is being held at Sydney, will have four main topics: "Family formation and fertility"; "Economic aspects of families"; "Family classifications and other statistical issues"; and "The caring role of families".

This is a critical time for the development of social statistics at the international level. For this reason, the third day of the Sydney meeting will be dedicated to discussing "Future directions for social statistics and the role of the Siena Group", and in that context, creating a multinational consortium of researchers and national statistical agencies engaged in collaborative work on the main themes of the meeting. It is proposed to collate a brief one- or two-page statement on the state of family statistics within each country participating in the meeting, including the concepts, definitions and classifications used, the sources of data and some broad trends. This information will be circulated at the meeting to provide a context for discussion. Its objective is to take stock of what the Group has achieved to date and what can be achieved through future meetings. The discussion will consider areas of mutual interest, such as the harmonization of concepts and classifications, and social accounting, where further joint work might be of benefit. The tentative structure for the third day of the meeting is:

1. The Siena Group after five years — origins and intentions, progress and achievements (Paolo Garonna, Italian Institute for Statistics (ISTAT)).

2. Harmonization of classifications (Pieter Everaers, Eurostat).

3. Further education and training in social statistics — 1998 Siena Summer School (Rudolph Teekens, Training Institute for European Statisticians).

4. Integrating social and economic statistics (Barbara Dunlop, Australian Bureau of Statistics).

5. Activities and the development of collaborative relationships with other complementary expert groups: Canberra Group, Delhi Group, International Association for Research in Income and Wealth.

6. Panel discussion: "Where to from here?" (Paolo Garonna, ISTAT; Michel Glaude, Institut national de la statistique et des études économiques; Heinz Gillomen, Swiss Federal Statistical Office).

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To obtain a copy of the forthcoming volume entitled "Monitoring multicultural societies", a Siena Group report, contact:

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For information on the sixth meeting, on the theme "Families in the twenty-first century", to be held at Sydney in December 1998, contact:

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